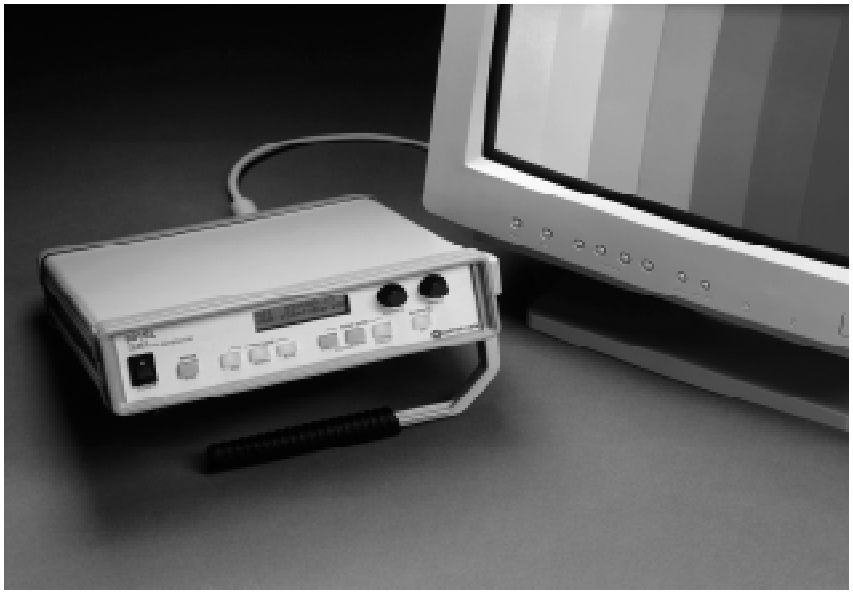
QUANTUMDATA



Model 801SL

Portable Video Test Generator

The 801SL is the ideal solution for repairing monitors, projectors or flat panel displays. You no longer need to sacrifice precision or programmability for portability or bench space.

The 801SL is an extremely accurate signal source that allows you to adjust to the exact factory settings – on your bench and in the field.

Over 100 standard computer formats are pre-programmed for you.

The 160 built-in test images include many manufacturers' custom images that will assure precise adjustment to the factory standards.

Main Features of the Model 801SL:

Compact Size
The 801SL will easily fit in your briefcase, leaving enough room for tools and other repair items.

160 MHz Video Pixel Rate
A programmable video clock rate up to 160 MHz allows precise convergence, focus and linearity measurements to be made on high-end computer workstation displays up to 2048 x 2048.

Many Computer Formats and Test Images Built-In
There are over 100 popular video standard formats built-in. Such as VGA, Vesa, XVGA, Sun, HP, Apple, IBM, and others. Once the correct format is selected you can select from the 160 test images included with the generator.

Easy Selection of Formats and Test Patterns
Easily select formats and images with the two front panel knobs. The names of the current format and test image are always shown on the LCD along with the H&V scan rates.

Adding Formats and Images
#1 Use the display connected to your generator as a full screen format editor (shown at right), or **#2** Use the included VGM software to control the generator via a virtual control panel operating under MS-Windows™.

MS-Windows™ Interface
Our Windows interface makes it easy for you to select the monitor type you're testing and the test images you need. Just point and click using a mouse.

Custom Image Editor
Create full custom images that exactly match any manufacturer's production test patterns. Our new image editor is a full-featured Windows drawing program that lets you see the image on your PC as it's being created. The images automatically scale to match different resolution displays. One hundred custom images can be saved in the generator's Flash memory, and an unlimited number on disk.

Custom Test Sequences
You can quickly set up custom sequences of formats and images for repetitive testing. Then, sequence them manually with a knob, or have a timed auto sequence for each test step. An operator will be less likely to miss a critical test step or adjustment.

Pixel Resolution Sync
You'll be sure the display is centered as precisely as it was from the factory with the pixel resolution sync accuracy.

Generator to Generator Copying
Easily and quickly copy all data from one generator to another in seconds. This is an easy way to assure each repair station has the same data.

Standard Connectors Built-In
Many standard video and sync connectors are built-in. There's no need for you to build or buy special adaptor cables. Just plug your display's signal cable into the matching connector on the 801SL.

Toggle RGB for Convergence
The R, G, B video and sync outputs can be individually turned on and off with separate buttons. Lit buttons indicate "on" status. This is useful for convergence adjustments.

Free Internet or BBS Access to Firmware Updates
Built-in Flash memory lets you update the 801's firmware from a computer. Just download the latest firmware file from our Website or BBS into your 801 using your PC. This unique capability gives you fast and easy access to all our latest improvements.

RS-232 & IEEE-488 Ports
Backup, create, edit, delete and rearrange formats via a computer. Also, remotely control all the front panel functions.

ATE Applications
If you want to write your own application to control the 801SL, our software will meet your needs. We've included the Source files and Drivers you'll need whether you're in a DOS or a Windows environment. Contact our applications department for more information.

```
Name: ABC_m02m                                          Pixel Rate:
Location:  173                                    16.257 MHz       61.512 ns
Entry Units: Time
                        Horizontal                      Vertical
Rate:            18.432 KHz*                    49.816 Hz
Active:             720 pixels    44.289 us*        350 lines     18.989 ms*
Blank:              162 pixels     9.965 us          20 lines      1.085 ms
Period:             882 pixels    54.253 us*        370 lines     20.074 ms*
Physical size:   11.811 inches   300.000 mm       8.858 inches   225.000 mm
Pulse delay:          9 pixels     0.554 us            0 lines      0.000 ms
Pulse width:        144 pixels     8.858 us           16 lines      0.868 ms
EQ Before:                                              0 lines
EQ After:                                               0 lines
Scan:          Progressive (non-interlace)
ACS kind:      none                                     On: -G-
DCS kind:      American ORed
DSS kind:      American separate                        DS Polarity: H+ V- C+
Sync select:   DSS                                      DS Gate: Hon  Von  Con
Video kind:    2-bit mono                               Pedestal: OFF  7.5 IRE
Video bias:     0.000  volts blank minus ground
Video swing:    0.714  volts white minus blank
Sync swing:     0.286  volts blank minus sync
Gamma:         OFF     2.200
Display code expected:    E Code read: F
 Exit | <-Cursor | Cursor-> | Check | Save | Save As | Undo |
```

Format Editor

801SL Specifications

Images – Over 160 Built-in

Colorbars	4	Focus	9
CrossHatch	10	Text	4
Dots	3	HV Reg	1
Grill	8	Flat Field	4
SMPTE133	1	Animated	2
Linearity	2	Graybar	2
In-house	110 (monitor manufacturers' in-house images used in their manufacturing process)		

Custom Images

Storage:	100+ images (typical)
Edit Methods:	801SL image editor and MS-Windows™ screen editor
Edit functions:	load, save, delete, cut, copy, paste, clear, layering, grid, snap-to-grid, snap-to-object, WYSIWYG, preview, group, un-group, exit
Primitives:	dot, line, triangle, rectangle, oval, center mark, centered cross, grid, H-grill, V-grill, IO-hatch, OI-hatch, limits, step #, page, format data block, text, info block
Colors:	256 <80MHz, 16 >80MHz
Fill patterns:	31
Fonts:	19

Formats – Over 100 Built-In

PAL:	6	HP:	7
RS-170:	3	NEC:	1
Mac:	13	VESA:	30
Sun:	10	Barco:	3
IBM:	16	Sony:	3
Intergraph:	2	Other:	19

Custom Formats

Storage:	300+ formats (typical)
Edit methods:	801SL Format Editor and MS-Windows™ screen editor

Sequences

Storage:	2000 steps
Edit methods:	801SL Sequence editor and MS-Windows™ screen editor
Parameters:	Format, image, image version
Auto times:	0.1 second to 24 hours
Name:	8 characters

Horizontal Timing

Frequency:	1.0 to 130 KHz
Total pixels per line:	
Range:	144 to 4096 (must be even)
Steps:	2 pixel steps ≤ 80 MHz 4 pixel steps > 80 MHz
Active pixels per line:	
Range:	16 to 2048 (Limit: H_{total} – 32 pixels)
Steps:	1 pixel steps ≤ 80 MHz 2 pixels steps > 80 MHz
Sync delay (pixels, front porch):	
Range (analog):	1 to (H_{total} – H_{active} – HS_{delay} – HS_{width} – 1)
Range (digital):	1 to (H_{total} – HS_{delay} – 1)
Step:	1 pixel steps ≤ 80 MHz 2 pixel steps >80 MHz
Sync pulse width (pixels):	
Range (analog):	1 to (H_{total} – H_{active} – HS_{delay} – HS_{width} – 1)
Range (digital):	1 to (H_{total} – HS_{delay} – 1)
Step:	1 pixel steps ≤ 80 MHz 2 pixel steps > 80 MHz

Pixel Timing

Frequency:	2 to 160 MHz
Step:	1.465 Hz
Jitter:	< 400 pS line-to-line (1 sigma)
Accuracy:	25 ppm (0 ppm when calibration software controlled)

Vertical Timing

Frequency range: 1.0 to 650 Hz

Vertical total scan lines per frame:	
Range:	2 to 4096 (progressive) 5 to 4097 (interlace)
Steps:	1 line (progressive) 2 lines (interlace)
Vertical active scan lines per frame:	
Range:	1 to 1024 lines (4095)† (progressive) 2 to 1024 (4094) (interlace)
Steps:	1 line
Vertical sync delay (lines, front porch):	
Range:	1 to (V_{total} – V_{active} – VS_{delay} – VS_{width} – 1)
Steps:	1 line
Vertical sync width (lines):	
Range:	1 to (V_{total} – V_{active} – VS_{delay} – VS_{width} – 1)
Steps:	1 line

†Vertical actives beyond 2048 lines require a reduced horizontal active limit. Required reductions shown in table below:

H Active Range (pixels)	Max. V Active (lines)	Displayed Colors
16 - 1024	4095, (4094 Interlaced)	16
16 - 1024	2048, (2047 Interlaced)	256
1025 - 2048	2048	16
1025 - 2048	1024	256

Analog Video Outputs

Configuration:	RGB
Source Z:	75 ohms
Rise/fall times:	2.5 nSec typical
Overshoot:	< 10% (all outputs terminated)
Output levels:	
Video swing:	.714 V
Sync swing:	.286 V
Setup:	0 to 100 IRE
Calibration:	Manual adjustment (0.600V - 0.720 V)
Output protection:	Output buffers and 75 ohm series termination

Digital Video Outputs

Connector:	9 pin D-Sub
Configuration:	MDA, CGA & EGA
Signals:	digital VI (MDA); digital RGB digital RGBI (CGA) digital RrGgBb (EGA)
Source Z:	75 ohms (±2%)
Rise/fall times:	2.5 nSec maximum ≤ 4.0 nSec typical
Levels:	'0' = 0 V, '1' = 5 V open circuit '0' = 0 V, '1' = 2.5 V terminated

Sync

Modes:	Separate Horiz. & Vert. Composite
Composite configurations:	American HS OR'd & VS; Serrated American Serr. &Eq (interlaced) European HS OR'd & VS; Serrated European Serr.&Eq (interlaced)
Eq. pulse width:	(HS_{width} / 2) pixels
Serr. pulse width:	H_{total} – HS_{width} pixels (programmable) (H_{total} / 2) – HS_{width} pixels (interlaced)
Equalization interval:	
Before:	0 to (V_{total} – V_{active} – VS_{width} – Eq_{actual})
After:	0 to (V_{total} – V_{active} – VS_{width} – Eq_{before})
Steps:	1 line
Interlace modes:	
	American (interval = prog. value) European (interval = prog.value -.5 line)

User Interface

Front Panel :	16 x 2 character LCD LED power indicator Format and image selector knobs Invert, video gate, sync gate, output, and on/off rocker
MS-Windows:	3.1, 95, NT Virtual front panel Format, image and sequence editors File managment Configure (start-up) file editor
MS-DOS	
Command line:	Terminal emulator for interacting directly with the 801SL

Computer Interface

We supply the code necessary to connect the 801SL to Automated Test Equipment (ATE) applications.

MS-Windows DLL:	A DLL is supplied that lets you use the 801SL's command library in your MS-Windows application
MS-DOS Driver:	Use the 801SL's command library in your MS-DOS application.
MS-DOS send utility:	For sending command files that customize the 801SL for your application.
C source code:	Complete C source code is supplied that lets you use the 801SL's command library in your C application.
Windows NT:	Driver (optional)

Computer Ports

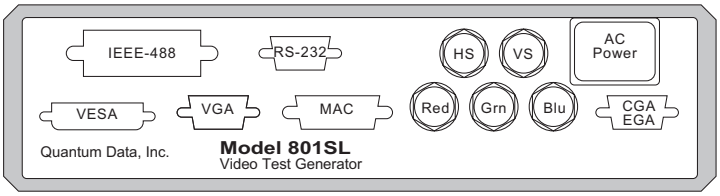
IEEE-488 interface:	
Protocol:	IEEE-488.2
Connector:	24 position microribbon
Serial interface:	
Type:	RS-232
Baud rates:	300 through 38,400
Data:	7, 8
Stop:	1, 2
Parity:	none,odd,even
Handshake:	none, RTS/CTS
Connector:	9 pin D-Sub receptacle
801SL copy:	
Baud rate:	38,400
Protocol:	Y-Modem Batch

Other Characteristics

AC Mains:	
Frequency:	47 - 440 Hz
Voltage:	90 - 250 VAC
Power:	20 watts
Weight (unpacked):	5-1/2 lbs. (2.5 kg)
Size (unpacked):	3-1/4 in. x 10 in. x 10-1/2 in. (8.3cm x 25.4 cm x 26.0 cm)

Options

Carrying handle:	Locking handle also functions as a stand to support the generator on a tabletop.
Case mount:	Mounts on or below a desk; allows the 801SL to tilt to a maximum angle of 45° for easy viewing.
Rack mounting kit:	Consists of a rack panel, mounting brackets, and instructions for installing the 801SL into an instrument rack.



801SL Rear Panel diagram, showing connector and port locations (not to scale).

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